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Bulletin No. 47

ESTABLISHED 1900

REYNOLDS ELECTRIC COMPANY

Reco

Flashers for Electric Signs and Displays

Color Lighting Equipment

Traffic Controlls For Stop and Go Signals

Timers For Special Contacting Work

Dimmers, Motor Driven

Motors Sizes 1/20 to 1/4 H. P., D. C. and A. C.

Reflectors for Poster and Bulletin Boards

2650 W. Congress St. **Chicago, Illinois**

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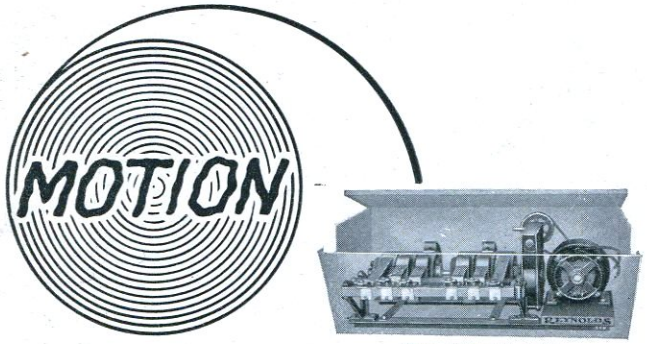
Reco Products are the result of years of experience—are used and endorsed by the leading Sign Manufacturers, Central Stations, Contractors and Engineers everywhere.



Pat. May 16, 1915

Reco Standardized Flashers for Electric Signs, Illuminated Bulletin Boards, Posters, Window Displays, Decorative Lighting, Traffic Signals, Danger or Warning Lights, Sirens, Horns, or whatever predetermined opening and closing of circuits is required.

Have patented and exclusive features, are adjustable, interchangeable, simple, foolproof, durable and reliable.

Reco Color Lighting Equipment includes Color Hoods, full and half types, Cylinders, Color Plates to cover lamps in Electric signs, decorative effects, interiors and exteriors, flood lights, etc.

Indispensable wherever colored lights are used.

Directions for Ordering

State flashing effect desired, number of lamps and wattage in each circuit. It is best to send a sketch of sign thereby enabling us to better understand the electrical effect expected.

State load, as the size of brush required depends upon the number of watts per circuit.

The number of brushes is determined by the number of changes. Flashing "On" and "Off" requires one brush; "Alternate Sides" or "Two Colors," two brushes; "Spelling" a five-letter word, five brushes, etc.

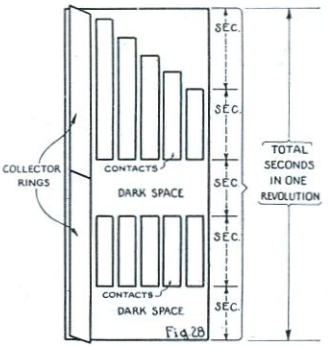
The number of circuits should correspond with the number of brushes on the Flasher. To tie two or three brushes together (bus-barring) and connect to an overloaded circuit is of no avail as the first brush "making" and the last "off" carries the whole load and results in premature burnouts of both brushes and contacts.

Specify if AC or DC, voltage, cycles, if two or three wire service, how to ship, freight or express.

If you have no account with us, send remittance with order.

Lay-out of Flasher Drum

When special timing is required, the "on" as well as "off" periods should be indicated as shown in Figure 28, using the Layout Chart of the RECO Flasher Drum on the reverse side of our Flasher Order Blank.



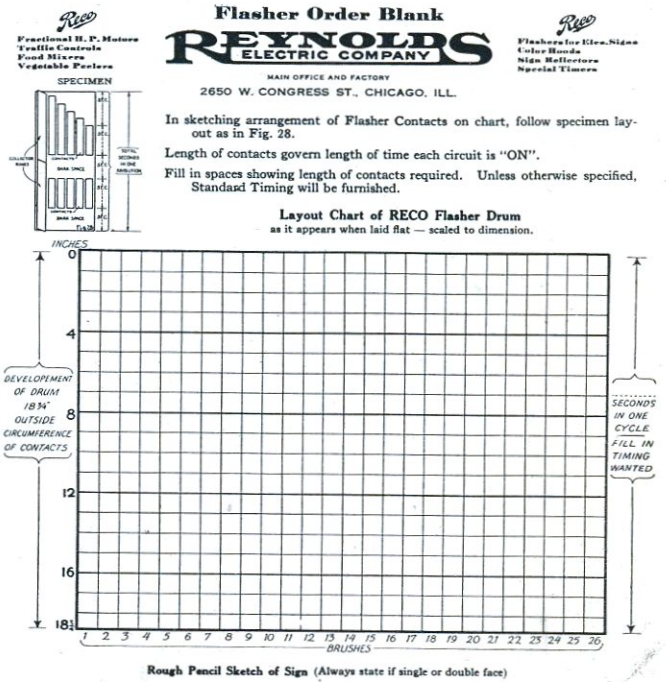
Keep circuits within brush ratings but if, for practical reasons, overloads are necessary, do not overload more than 25%.

A Flasher is required to perform the hardest known duty in contacting work; in some cases "making and breaking" circuits 21,000 times per hour for an 18-hour period. It is therefore easy to see that due to the unusual number of "makes" and "breaks" there is bound to be considerable wear on the brushes and contacts due to arcing and this wear must be compensated by occasional resetting of brushes.

The successful operation of any flasher lies chiefly in the hands of the man who makes the initial installation. If the Flasher is installed and connected up properly, it will give the effect it is designed for.

Maintenance—See pages 12 and 13 for complete instructions.

To simplify ordering, use our order blanks—write for a supply today.


Reco
Fractional H. P. Motors
Traffic Controls
Food Mixers
Vegetable Peelers

Flasher Order Blank

REYNOLDS ELECTRIC COMPANY

MAIN OFFICE AND FACTORY
2650 W. CONGRESS ST., CHICAGO, ILL.

Reco
Flashers for Elec. Signs
Color Hoods
Sign Reflectors
Special Timers

SPECIMEN

In sketching arrangement of Flasher Contacts on chart, follow specimen lay-out as in Fig. 28.

Length of contacts govern length of time each circuit is "ON".

Fill in spaces showing length of contacts required. Unless otherwise specified, Standard Timing will be furnished.

Layout Chart of RECO Flasher Drum
as it appears when laid flat — scaled to dimension.

INCHES
0
4
8
12
16
18½
DEVELOPMENT OF DRUM 18¾" OUTSIDE CIRCUMFERENCE OF CONTACTS
SECONDS IN ONE CYCLE. FILL IN TIMING WANTED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
BRUSHES

Rough Pencil Sketch of Sign (Always state if single or double face)

Above shows reverse side of Reco order blank.

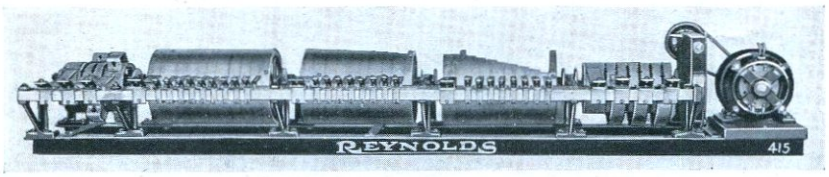
Use layout chart to indicate flashing and timing specifications.

This will eliminate all chances for misunderstanding.

How to Estimate

The following pages show standard types of Flashers used on the average sign, but spectacular displays nearly always require a combination of two or more types in order to produce the proper electrical effect.

Combination Flashers



Combination O-3-15, SC-25-5, O-2-15

Method of Figuring Cost

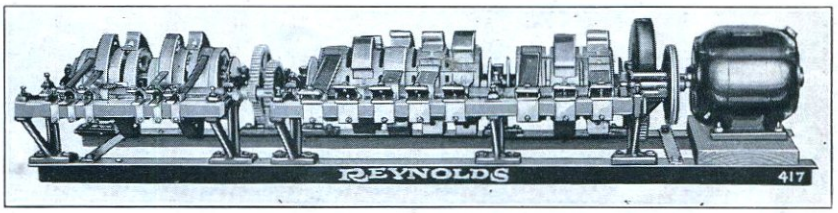
When combining "On and Off," "Speller" and "Script" types, take base price of first Flasher and add cost of additional brushes. See below for method of figuring flasher at left.

O-3-15 On and Off type with motor	$45.00
SC-25-5 Script type less motor—	
25 Brushes at $3.00 each	75.00
3 extra collectors at $3.00 each	9.00
O-2-15 On and Off type—	
2 brushes at $5.00 each	10.00
1 Collector	5.00
	$144.00

Method of Figuring Cost

When combining either one or all of the above with "Speed" or "Chaser" type, add list price of second flasher less motor to base price of first flasher. See below for method of figuring flasher at right.

O-4-5 On and Off type—	
O-3-5 with motor	$37.00
One extra brush	3.00
One extra Collector	3.00
S-6-8 Speed type—	
S-4-8 less motor	$32.00
Two extra brushes	10.00
One extra collector	5.00
	$90.00



S-6-8 Combined with O-4-5 3-wire

Speeds

All worm gear driven Flashers ("On and Off," "Speller" and "Script" types) have a speed ranging from 3 R. P. M. to 10 R. P. M.

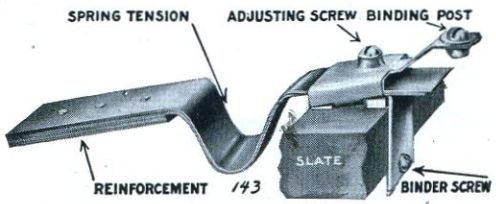
All spur gear driven Flashers ("Speed" and "Chaser" types) have a speed ranging from 40 to 60 R. P. M.

Speeds other than the above require special gearing, which can be furnished at a slight additional cost.

Practically any speed is obtainable, opening and closing of circuits ranging from 480 times per minute to as slow as once every fifteen minutes, or slower when required.

The RECO improved brush and holder has been successful for over 15 years.

Use the original, as imitations and copies are usually failures.



Brush is built up with copper leaves and has phosphor bronze spring back, is reinforced at contact-making point and will outlast any other construction.

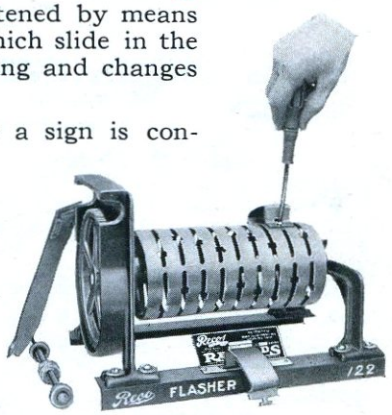
Can be reset without disturbing the connections.

Adjustability

Contacts are fastened by means of bolts and nuts which slide in the slots, making resetting and changes a simple matter.

Very often after a sign is connected a change is desired, and with this construction changes or adjustments are quickly and easily made.

A screwdriver is the only tool required.



Patented May 16, 1915.

Flashing too fast or too slow often spoils the advertising effect. This can be quickly remedied by putting a larger or smaller drive pulley on the Flasher or by a rearrangement of the contacts.

From a man who has spent years in sign maintenance work—

"I know from experience that RECO Flashers and Motors will lick the tar out of any other device for sign duty."

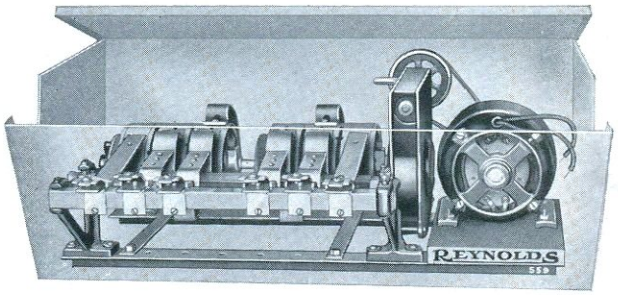
Reco On and Off or Color Changing Type

For flashing On and Off, Alternate Sides, two, three or more Colors, Kaleidoscopic Effects, Window Lighting Displays of various description, Sirens, Call Systems, and is also used as master or control.

Motor is mounted on Flasher base, belted and ready to install.

Steel cabinets furnished for all standard types described on Page 11.

Standard Drive is by means of round belts and grooved pulleys but we can, if desired, furnish motor direct connected to Flasher by means of spur gears.



Two Sizes

Capacity per brush, 400 watts (40 10-watt lamps)

Cat. No.	No. of Brushes	Size	Boxed Weight	Price, including Motor	16-Gauge Steel Cabinet
O-1-5	1	18x13x11 in.	50	$32.00	$9.00*
O-2-5	2	18x13x11 in.	55	34.00	9.00*
O-3-5	3	18x13x11 in.	60	37.00	9.00*

Additional brushes, $3.00 each.
Extra collector brushes, $3.00 each.

Capacity per brush, 800 watts (80 10-watt lamps)

O-1-15	1	18x13x11 in.	50	$35.00	$9.00*
O-2-15	2	18x13x11 in.	55	40.00	9.00*
O-3-15	3	21x13x11 in.	60	45.00	10.00*

Additional brushes, $5.00 each.
Extra collector brushes, $5.00 each.
*Larger size cabinets take special prices. See page 11.
When furnished less motor, deduct $16.00.

When ordering state—
Kind of current: D. C.—A. C.—Voltage—Cycles.
Flashing specifications
Watts per circuit.
If 2 or 3 wire service.
See page 2 for complete details on ordering:

Consult Our Engineering Department, who will work out flashing problems and suggest the latest and most practical methods for obtaining catchy electrical effects. Quotations furnished on special Flashers for automatic contacting, traffic signals, call systems, etc.

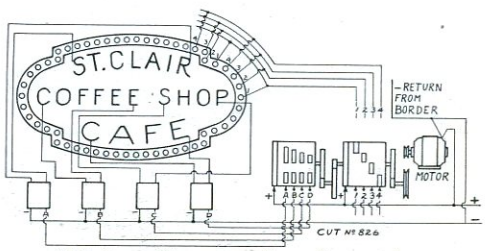
Electrodes, Transformers and Tubes Last Longer

A prominent manufacturer of Neon Signs writes us as follows: "In answer to your letter of December 21st, inquiring as to what effect flashing has on our Neon Tubes and Transformers, wish to state that the only effect we have been able to determine is that signs that have flashers attached to them give us less trouble than steady burning signs. This includes tubing, transformers, electrodes, and the complete sign in general."

Any steady burning sign may be flashed "on and off" without rearranging the wiring; if, however, it is desired to flash letter by letter, word after word, alternate sides or script, it is necessary to arrange the circuits accordingly, unless perchance the sign is wired for any of the above effects.

Flashing Tube Signs

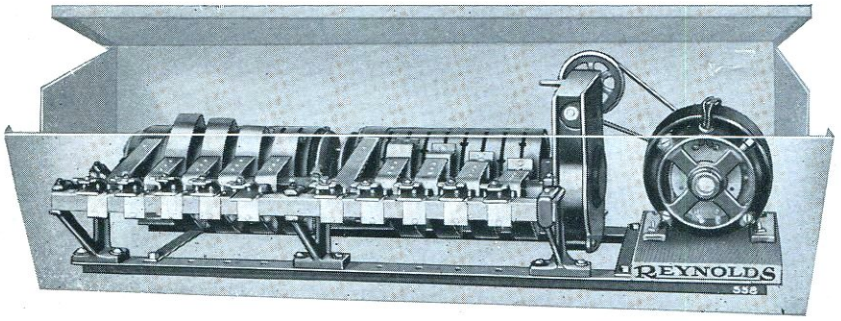
Beautiful effects can be secured by injecting motion into neon signs. Unless motion is used to attract the eye, the beauty of color often passes unnoticed. Motion effects of all kinds can be secured for neon by using RECO Flashers.



Wiring diagram for above sign

Reco Speller Type

For flashing Letter after Letter, Word after Word, Sunrise, Growing Flowers or Vines, Winding and Unwinding Discs and all sorts of building up and down effects.



Cat. No. SP-8-15

Two Sizes

Capacity per brush, 400 watts (40 10-watt lamps)

Cat. No.	No. of Brushes	Size	Weight Boxed	Price, Including Motor	16-Gauge Steel Cabinet
SP-4-5	4	18x13x11 in.	60	$40.00	$ 9.00*
SP-5-5	5	21x13x11 in.	62	43.00	10.00*
SP-6-5	6	21x13x11 in.	68	46.00	10.00*

Additional brushes, $3.00 each.
Extra collector brushes, $3.00 each.

Capacity per brush, 800 watts (80 10-watt lamps)

SP-4-15	4	21x13x11 in.	68	$50.00	$10.00*
SP-5-15	5	32x13x11 in.	73	60.00	12.00*
SP-6-15	6	32x13x11 in.	80	65.00	12.00*

Additional brushes, $5.00 each.
Extra collector brushes, $5.00 each.
*Larger size cabinets take special prices. See page 11.
When furnished less motor, deduct $16.00.

When ordering state—
Kind of current: D. C.—A. C.—Voltage—Cycles.
Flashing specifications.
Watts per circuit.
If 2 or 3 wire service.

We use cast iron cut gears, steel worms, and pinions, insuring positive drive and accurate timing.

A surplus of metal is used in both contacts and brushes (the only wearing parts), contributing to long life and durability.

Worm and gear are enclosed in a housing which is packed with grease and thus are self-oiling and noiseless.

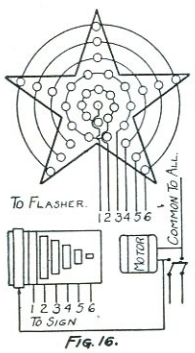


Fig. 16.

Fill housing with grease twice a year and gears will last indefinitely.

Illustrating the expanding and contracting effect.

Building up and building down.

Sockets are wired in circular circuits. The flasher brushes coming on in successive steps cause the star to expand gradually, going out the same way.

Standard Speller Effect

One letter after another till all are lighted, all out, all on together, all out and repeat.

Speller effects require a circuit for each letter and a flasher brush for each circuit.

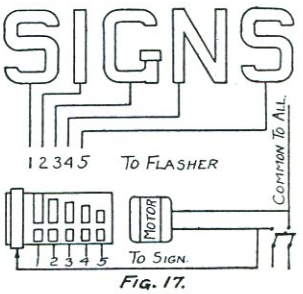


Fig. 17.

A sign flashing in this manner not only arouses curiosity and holds the attention, but imprints an indelible impression upon the passer-by.

Chromatic or Kaleidoscopic effects are usually wired in five circuits as shown.

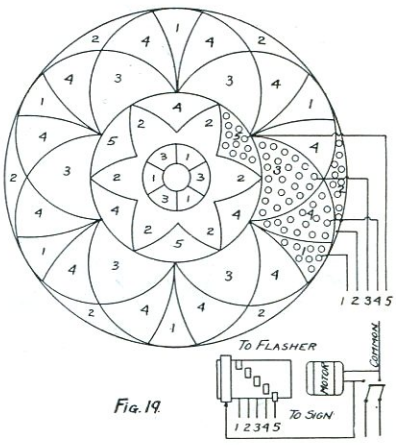


Fig. 19

Design takes a different shape in variegated colors with each flash.

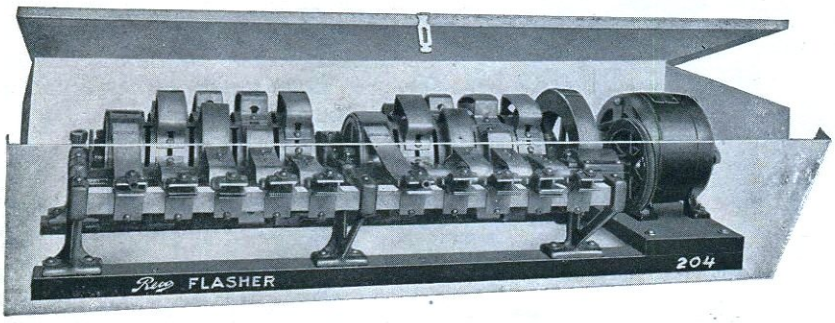
Can be made in various shapes, oval, square, maltese cross, etc.

Use "Motion" and "Color," the two greatest attention getters.

Reco Speed Type

Reproducing a wide range of spectacular motion effects, such as: Traveling Borders, Flames, Fountains, Flags, Revolving Wheels, Lightning, Rays, Sparks, Smoke, Dust, Clouds, Steam, Waterfalls, Pulsating, Twinkling, Running Borders, Moving Ground, Turning Globes, Falling Embers, Waves, Fireworks, Pennants, Rain, Dropping Coins, Juggling Balls, etc.

Standard Type



Cat. No. S-8-8

Two Sizes

Capacity per brush, 200 watts (20 10-watt lamps)

Cat. No.	No. of Brushes	Size	Boxed Weight	Price, including Motor	16-Gauge Steel Cabinet
S-4-4	4	18x13x11 in.	55	$40.00	$ 9.00*
S-8-4	8	25x13x11 in.	67	52.00	12.00*

Additional brushes, $3.00 each.
Extra collector brushes, $3.00 each.

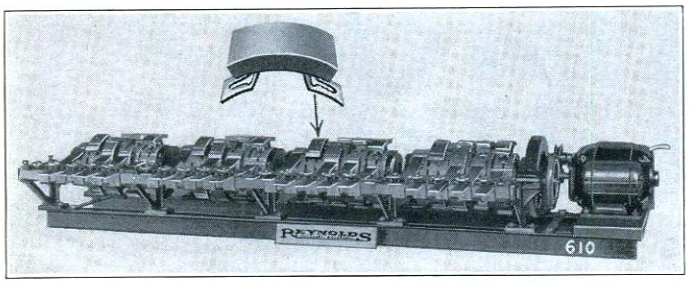
Capacity per brush, 400 watts (40 10-watt lamps)

S-4-8	4	21x13x11 in.	68	$48.00	$10.00*
S-8-8	8	32x13x11 in.	80	68.00	12.00*

Additional brushes, $5.00 each.
Extra collector brushes, $5.00 each.
*Larger size cabinets take special prices. See page 11.
If furnished less motor, deduct $16.00.

Heavy Duty Type

Should be used only in such cases where S-24-8 or larger Standard Speed Type Flasher is required.



Capacity per brush, 1000 watts (100 10-watt lamps)

Cat. No.	No. of Brushes	Size	Boxed Weight	Price, including Motor	16-Gauge Steel Cabinet
HDS- 4-10	4	21x13x11	70 lbs.	$ 70.00	$10.00
HDS- 8-10	8	32x13x11	90 lbs.	115.00	12.00
HDS-12-10	12	42x13x11	120 lbs.	160.00	24.00
HDS-16-10	16	53x13x11	150 lbs.	190.00	30.00

Additional Brushes **$9.00** each (including Collector Brushes)
If furnished less motor, deduct **$16.00**

Speed effects are usually wired in four circuits (1-2-3-4) as shown in the different wiring diagrams. This may be varied by wiring in six (1 to 6) or eight (1 to 8) circuits which increases the length of the lighted strings of lamps as well as the dark spaces.

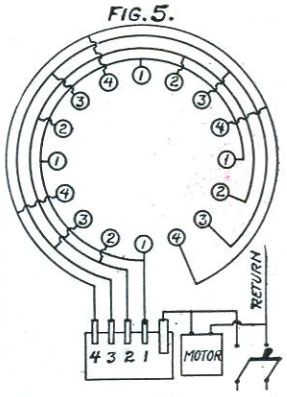
Number sockets 1-2-3-4. Connect all No. 1 to circuit No. 1 and to flasher brush No. 1. Nos. 2, 3 and 4 likewise. Keep in mind, that the direction of the numbering determines the direction of the movement of the shadows.

Wiring Diagram

for traveling borders, circles and movements in general.

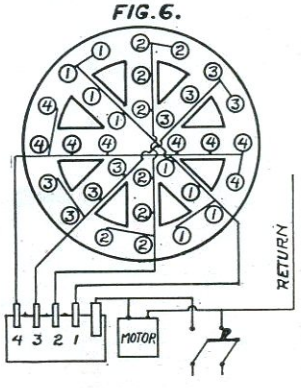
The number of sockets must always be a multiple of 4, otherwise at some point a jump will occur.

FIG. 5.



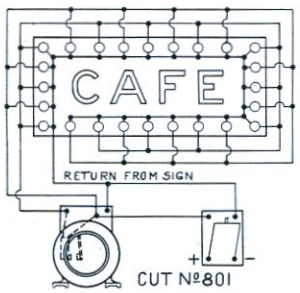
Revolving wheels are wired as indicated in Fig. 6.

FIG. 6.



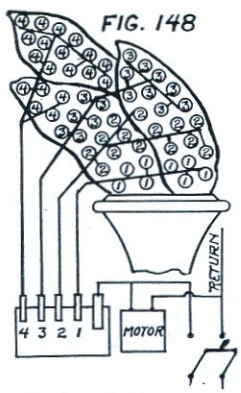
Wiring Diagrams for Special Speed Effects

A simple and inexpensive border effect produced with a one brush unit Flasher. (Illustrated Page 10.)



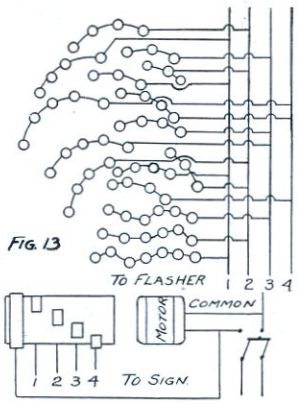
Wired in two circuits—every alternate lamp is connected to flasher, giving a motion effect similar to traveling when viewed from certain angles.

Fire, Flames, etc.



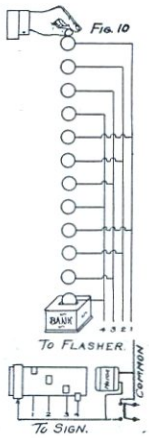
Sockets in flames when bunched (as shown in Fig. 148) give a more natural effect than if wired in straight rows. Standard speed type flasher is used.

Smoke, Steam, etc.



Smoke, Steam, etc., are wired in crescent form. The shapes, sizes and lengths of the semi-circles are irregular, and are numbered 1-2-3-4 in an upward and outward direction.

Dropping Coins, Flying Sparks, etc.



This and similar effects are wired 1-2-3-4 as shown. A speed type flasher is used and contacts arranged so that only one brush is in the circuit at one time.

Control or Master Flashers

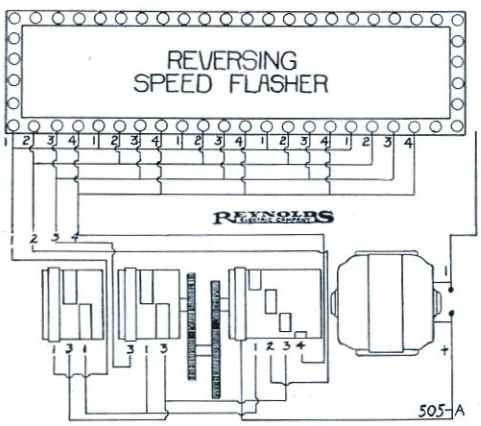
When it is desired to darken the effect at intervals, master or control brushes are provided. See Figs. 11, 15 and 505A.

A border or circle revolving first in one direction, then in the reverse, requires four controls.

To give the "standing still" effect, four controls are necessary.

These few simple examples will illustrate the various methods of controlling speed effects.

Reversing Borders



Standard Reversing Traveling Border—Traveling first to the right, then to the left, reversing approximately every five seconds. Wiring diagram, hook-up and flasher layout shown in Figure 505A. Requires four brush "speed" Flasher with four controls.

Fig. 15

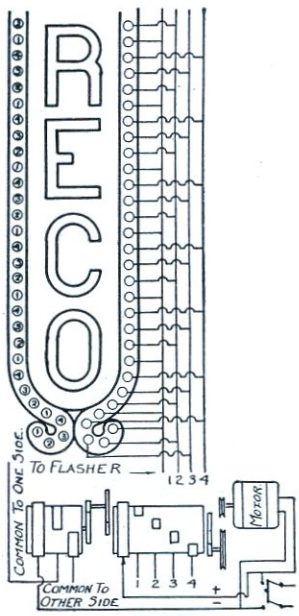
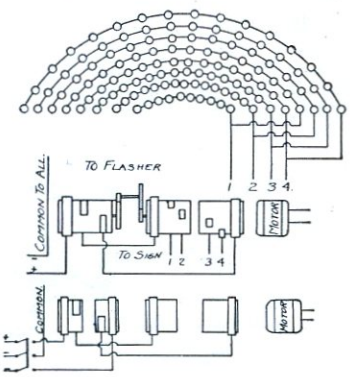


Fig. 15 shows method employed when it is desired to darken border effects periodically. In this case the neutral wires from both sides are "broken" by the control brushes.

Rays and Sunrise



For rays wire 1-2-3-4 and use four brush speed type.

For sunrise, wire in eight or more circuits and use eight brush speller type.

Upper flasher shows control connected to two-wire service.

Lower cut shows three-wire hook up.

Reco Chaser Type

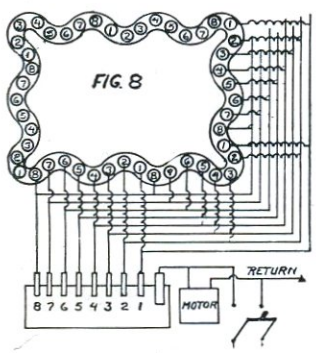
For Skyrockets, Arrows, Lightning, Sparks, Waving Flags, Billiards, Pool or Bowling, Pointing Hand, Crawling Caterpillars, Snakes and similar effects.

The effect produced by the "Chaser" type should not be confused with that of the "Speed," as the "Chaser" shows strings of light crawling around a sign border, with long dark spaces intervening, while the "Speed" shows a short string and only one shadow or dark space, and gives the continuous traveling or revolving effect.

Directions for Wiring

For two "Chasers," divide the total number of lamps by two, i.e., 60 lamps divided by two equals 30 circuits, and number sockets 1 to 30 and 1 to 30. This will require a 30-brush flasher.

For three "Chasers," divide by three and number from 1 to 20, 1 to 20 and 1 to 20, which requires a 20-brush flasher.

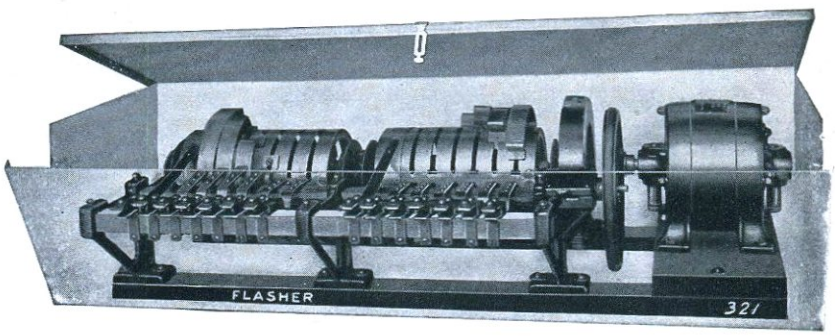


The length of the "Chaser" is governed by the number of brushes in contact, usually one-half of the total number of brushes.

For four "Chasers," divide by four and number from 1 to 15, etc., etc.

When sockets are wired in multiples of two, half as many brushes are required as given above.

The average border will accommodate two "Chasers;" larger borders, three, four or more.



Cat. No. C-12-5

Capacity per brush, 400 watts (40 10-watt lamps)

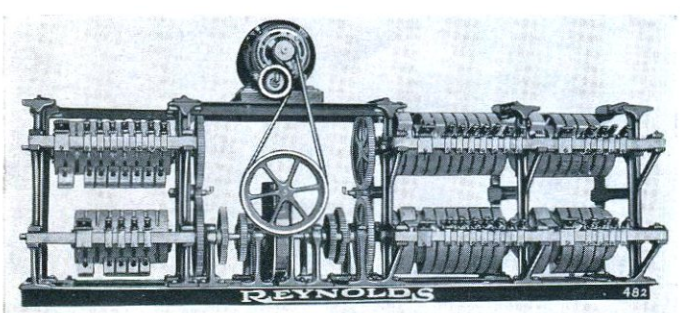
Cat. No.	No. of Brushes	Size	Boxed Weight	Price, Including Motor	16-Gauge Steel Cabinet
C-8-5	8	25x13x11 in.	67	$48.00	$12.00*
C-9-5	9	32x13x11 in.	80	51.00	12.00*

Additional brushes, **$3.00** each. Extra collector brushes, **$3.00** each.

*Larger size cabinets take special prices. See page 11.
If furnished less motor, deduct **$16.00.**

When ordering state—
Kind of current: D.C.—A.C.—Voltage—Cycles.
Flashing specifications.
Watts per circuit.
If 2 or 3 Wire service.

Two Deck Flasher showing our simple and rugged gear transmission design.



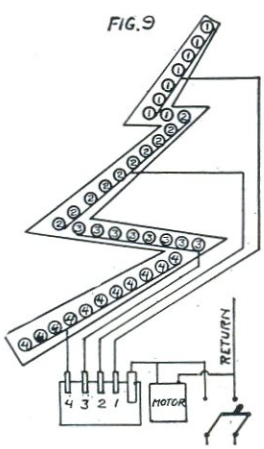
Note: Motor is equipped with belt tightener, an exclusive RECO feature used on large flashers.

Lightning Effects

are wired as shown, each hook or streak is wired in one circuit. Four streaks require a four-brush flasher. (Either "Chaser" or "Speed" type.)

If lightning is not continuous, but is required to synchronize with reading matter or spectacular effect, a control flasher (Cat. No. 01-15) is necessary.

FIG. 9



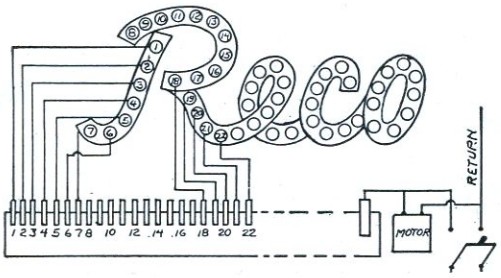
See page 3 for instructions for figuring combination Flashers.

Reco Script Type

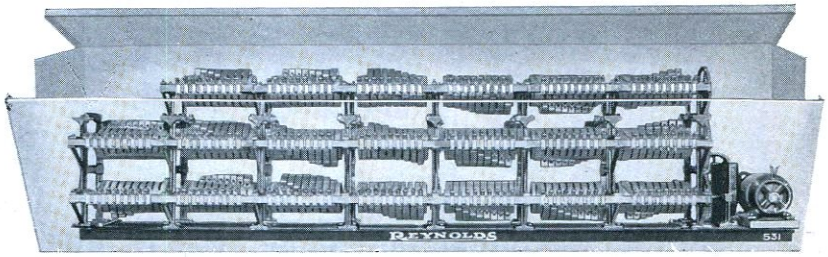
Reproduces Invisible Handwriting Effect in Script Letter Signs

Script letters are usually wired two sockets to a circuit; thus if the total number of sockets is 100, 50 circuits and 50 brushes on the flasher are required. The flourish or tail (if any) can be flashed as one to save wiring.

Letters of large size can be wired 4, 6, 8 or more sockets to a circuit without impairing the effect.



Wiring diagram for script effect.



Capacity per brush, 400 watts (40 10-watt lamps)

Cat. No.	No. of Brushes	Size	Boxed Weight	Price, including Motor	16-Gauge Steel Cabinet
SC-10-5	10	32x13x11 in.	80	$48.00	$12.00*
SC-11-5	11	32x13x11 in.	82	51.00	12.00*

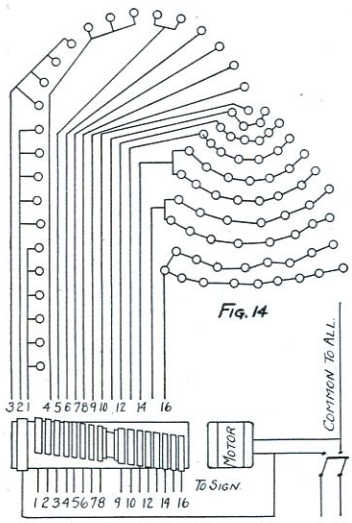
Extra collector brushes, **$3.00** each.
Additional brushes, **$3.00** each.
*Larger size Cabinets take special prices. See page 11.
If furnished less motor, deduct **$16.00.**

When ordering state—
Kind of current: D. C.—A. C.—Voltage—Cycles.
Flashing specifications.
Watts per Circuit.
If 2 or 3 wire service.

Fireworks, Rockets, Roman Candles and other imitations of pyrotechnic displays are very attractive. Every town should have one or more displays of this order. Just because you yourself have traveled and have once seen an effect of this kind does not signify that it is "old stuff" to the rest of the community.

People like to look at spectacular displays; they talk about them, and that's the kind of advertising that pays.

The first socket at the base of the rocket consists of six lamps, the next five, etc., and at the curve, single sockets. This will show acceleration at the start and slowing up as the burst is reached. The burst is wired in two or three circuits, and the streamers in double rows as shown.



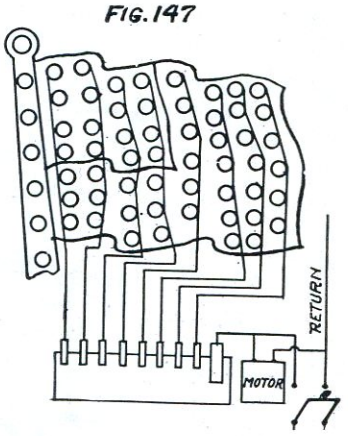
Wiring Diagram for Skyrockets

This diagram gives the general idea, and it may be expected that different designs and greater or less number of lamps require modifications or variations.

Take no chances with unknown or irresponsible makes, as the best effects are often ruined by makeshift flashers.

Waving Electric Flags, Pennants, etc., are very appropriate for public buildings, clubs and various lines of business houses.

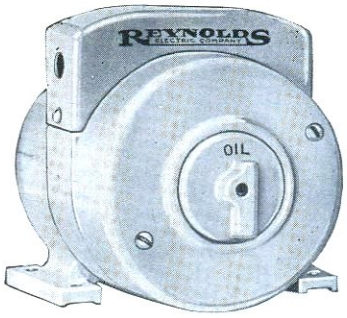
FIG. 147



Flags are wired in staggered rows as indicated and require a flasher brush for every row.

Reco Unit Flasher

A reliable motor driven flashing mechanism, positive in timing, rugged in construction, small in size, neat in appearance, quiet in operation, weather proof, easily installed, and a truly satisfactory device which will operate day in and day out with minimum attention.



Cut No. 444
Dimensions 5⅝" wide x 6⁹⁄₁₆" high x 9⁷⁄₁₆" long.

For Electric Signs (exposed lamp, interior illuminated or reflector lighted types).

Made with **one brush** to flash on and off, **two brushes** to flash one side then the other or two colors alternately. (See cut 467.)

Also for warning signals, blinking lights, R. R. crossings, traffic guides, stop signs, flashing beacons, etc.

Installation—Can be mounted on a shelf against a wall, or on a hanging bracket.

Always install feet down, otherwise oil and grease chambers will leak.

May be mounted inside or outside, or in the sign if necessary. However, it is always more satisfactory to put the Flasher in a protected place where it is accessible.

This Flasher is comparatively noiseless and takes up very little more room than an ordinary Motor, and a suitable space, as well as a location, is therefore easy to select.

Timing—Can be furnished with two speeds: 60 R. P. M. and 15 R. P. M. **First Speed** flashing each circuit on and off sixty times per minute (approximately one half second on and one half second off).

Second speed fifteen times per minute (approximately two seconds on and two seconds off).

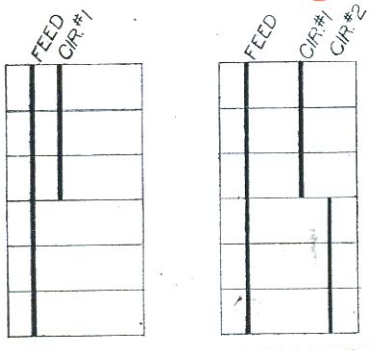
The first speed is suitable for blinkers or other fast flashing, while the second speed is used for sign work or other slow flashing effects.

Construction—Housing is of cast iron. Enameled in gray finish. Brush cover is removable by taking out two screws. Terminal cover is easily lifted by unscrewing two screws.

The contactor drum is in a separate compartment, and operates on a "quick make-and-break" principle entirely new and novel in Flasher construction.

Oiling—Inward motor bearing receives oil from the housing inclosing the gear train, which is packed with lubricant. The outward bearing has a standard oiler with a wick feed. Another oiler is located at brush and contactor end of the Flasher.

Flashing Effects



Cut No 467

One or two can be flashed as shown in Cut No. 467.

Twinkling or winking effects in sign borders are produced with either a one or two circuit Flasher, operating at 60 R. P. M. Circuits, however, are limited to 400 watts, as this is the maximum current any one brush will carry on this service.

For slow flashing effects (two seconds on and two seconds off) brushes will carry 800 watts each.

Price List

Capacity 400 Watts per Brush or Circuit

Cat. No.	No. o Brushes	Speed	Weight	Prices AC 11OV 60 CY Only*
H-1161	1	Fast (60 RPMs)	25 lbs.	$33.00
H-2161	2	Fast (60 RPMs)	25 lbs.	35.00

Capacity 800 Watts per Brush or Circuit

H-1361	1	Slow (15 RPMs)	25 lbs.	$35.00
H-2361	2	Slow (15 RPMs)	25 lbs.	37.00

*When furnished for DC 11OV and odd voltages or cycles, add $4.00 list.

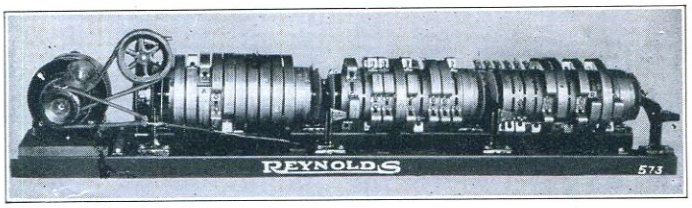
Specify clearly number of brushes, circuits, speed, AC or DC, voltage, cycles.

The number of brushes governs the flashing effect. See cut No. 467.

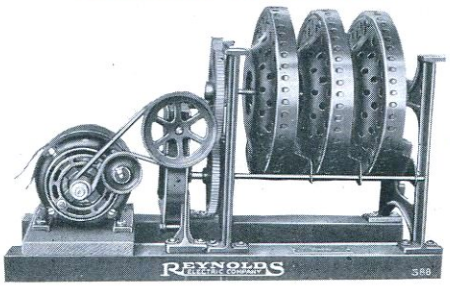
Note: Made single pole only (for two-wire service).

Figuregram Controls for Electric Score Boards

Used for Football Stadia, Race Tracks, Polo Grounds, Baseball Parks, Automobile Racing, Hockey, Basket Ball, and other sports and games where it is necessary to record scores promptly, legibly and automatically.



Dimmer Flashers



We have developed special equipment for work of this kind and are prepared to furnish a practical dimming Flasher apparatus at a moderate price.

Gradually dimming lights in 50 steps from full bright to dark and back to bright.

State complete flashing specifications, number of lamps, size, wattage on each circuit, kind of current, etc.

Cat. No.	No. of Plates	Max. Capacity	Price
D1-1700	1	1700 Watts	**$200.00**
D2-1700	2	3400 Watts	**300.00**
D3-1700	3	5100 Watts	**400.00**

Standard Automatic Control

Controls furnished for either automatic or manual operation.

Wiring diagrams and hook-ups are supplied by us.

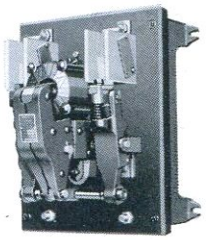
Figuregrams represent the most modern, quickest, as well as the least costly method of posting scores. Instantaneous push-button control enables official or scorer to show result on board in electrically lighted numerals instantly.

Described in detail in Bulletin 802.

Magnetic Switches for Heavy Loads

Magnet Switches, built specially for sign work.

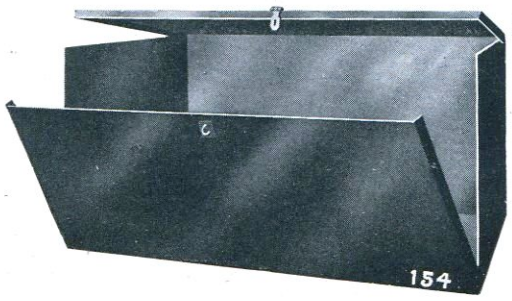
Sometimes it is more practical as well as more economical to break a number of circuits as one and in cases of this kind a Magnet Switch is used, controlled by a Flasher.



Cat. No.	Type	Capacity per Pole	Capacity per Switch	PRICE A.C.	PRICE D.C.
MS-30	D.P.	3,000 W.	6,000 W.	**$ 38.00**	**$ 70.00**
MS-50	D.P.	5,000 W.	10,000 W.	**51.00**	**96.00**
MS-100	D.P.	10,000 W.	20,000 W.	**136.00**	**150.00**
MS-150	D.P.	15,000 W.	30,000 W.	**193.00**	.....
MS-200	D.P.	20,000 W.	40,000 W.	.....	**236.00**

Flasher Cabinets

Made of 16 U. S. Gage Steel Enameled in Black



No.	Length	Width	Height	Price	Flashers which can be accommodated
1	20 in.	15 in.	12 in.	**$ 9.00**	Nos. SP4-5, O2-15, S4-4
2	26 in.	15 in.	12 in.	**10.00**	Nos. SP7-5, O4-15, S8-4, S4-8
3	33 in.	15 in.	12 in.	**12.00**	Nos. SP14-5, O8-15, S8-8, C9-5
4	42 in.	15 in.	12 in.	**18.00**	SP19-5, O11-15, Comb. S4-8 and O4-15
5	50 in.	18 in.	12 in.	**24.00**	SP21-5, O14-15, S12-8, Comb. S8-8 and O4-15
6	66 in.	18 in.	12 in.	**30.00**	Nos.SP25-5,O20-15,S20-8,Comb.S8-8andO8-15

Above are standard sizes carried in stock

General Information

On Installation, Adjustment, Construction and Maintenance of Reco Flashers

Brush Adjustment — Failure to keep brushes in proper adjustment is ninety-nine times out of a hundred the cause of poor flashing effects. Repairmen — do not wait until the lamps flicker faintly before you move up the brushes.

Appoint a regular time to reset the brushes (this varies with the load, kind of current and speed of Flasher).

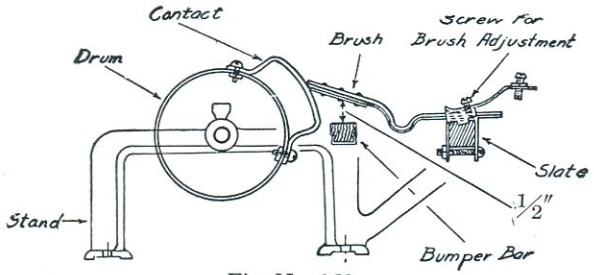


Fig. No. 169

This Cut shows the correct brush setting and if our directions are followed conscientiously long life of brushes and contacts may be expected. More important than this, your sign will be efficient and deliver 100% advertising results instead of being an "eyesore."

The value of faithful maintenance should not be underestimated.

Installation. As a Flasher is **only** a machine, it naturally requires periodic attention such as brush adjustment, examination of connections, oiling and cleaning.

Do not set any Flasher in an inaccessible place but put it where it can be inspected conveniently and so that the maintenance man will not face danger every time he is called to make a minor adjustment. Too often the electrician making the initial installation loses sight of the fact that the Flasher needs attention and installs the Flasher under the ceiling, in a garret or in a dark hole where even trying to look at the Flasher proves a hardship. Prevent this kind of installation for the good of the owner.

Maintenance. Perhaps the most neglected part of an electric sign is the Flasher. Nothing looks more untidy than a ragged flashing effect and the responsibility rests with the maintenance man. The contacts should be kept clean and the brushes moved up to compensate for the wear. This should be done at regular periods.

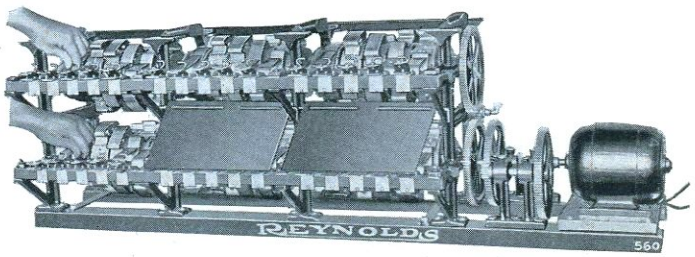
DC gives off a more destructive spark than AC. Some wiring is subject to more moisture with attending grounds than others, which in turn increases the amount of current flowing through the Flasher. The number of "makes" and "breaks" per minute has everything to do with the life of brushes and contacts and it stands to reason that the brush on a **Speed** Flasher making and breaking 400 watts (4 amps.) 240 times per minute will not last as long as the brush on an **On** and **Off** type Flasher carrying the same load and flashing on and off two or three times a minute.

Cleanliness is Desirable. A Flasher should be kept free from dust and grime. It not only adds to the life of the Flasher but the absence of dirt and grease will allow it to operate more satisfactorily and last longer.

Grounds in Signs are common especially after a rain and cause an excess of current to flow through the Flasher brushes. The condition corrects itself with weather conditions but in the meantime the Flasher brushes require more frequent attention. A temporary ground can be located with a test lamp or magneto, but as a rule the safest way to test for grounds is to apply an ammeter.

Connections should be examined periodically. Very often a connection works loose which causes heating and consequent burning and damage to Flasher brushes and contacts. It is advisable that inspection of the connections be made regularly.

Contacts on Speed Type Flashers should be ***wiped with an oily cloth*** while the contacts on **slower running Flashers** should be ***run dry.*** Keeping the contacts smooth and clean is sufficient. Many make the mistake of keeping the contacts covered with grease or oil which causes burning.



See how simple it is to reset brushes on RECO Flasher. **Use your fingers; no tools required.** Shield safeguards against short circuits caused by falling particles—furnished on all double or triple deck flashers.

General Information

Overloading — Many electricians disregard the brush ratings recommended by us and when the brushes burn, place the blame on the manufacturer.

In connecting a Flasher, the best results are obtained only when the number of circuits corresponds with the number of Flasher brushes and **when** circuits are **not** overloaded. Bus-barring is only a subterfuge as the first brush "on" and the last "off" carries the entire load.

When overloads are necessary for practical reasons, a little discretion should be used. For instance the **On** and **Off** type will carry a greater percentage of overload than the **Speed** type as the brush on the former "makes" and "breaks" 3 to 6 times a minute whereas on the **Speed** type, it "makes" and "breaks" 240 to 360 times per minute. The arc, as everyone knows, causes destruction to both the brush and contact and the more frequent the "making" and "breaking" the more burning and wearing.

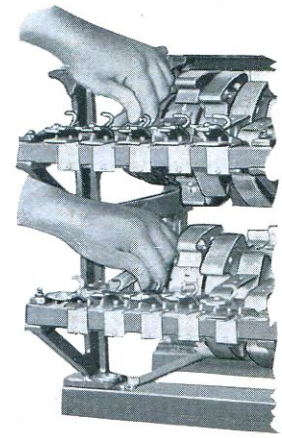
As a consequence the brushes on the **Speed** types should never be overloaded more than 25%. The slow Flashers, however, can be overloaded as much as 50% under certain conditions.

Alternating current is less severe than direct current and no trouble is experienced by overloading within the above limits on AC. On DC it is not advisable to overload so much as the arc is more destructive.

Correction of Brush Troubles with Direct Current—When a circuit is apparently not overloaded and the brush burns severely, we suggest reversing polarity so that the current flows through the lamp and returns through the Flasher. This eliminates a great deal of destructive burning as the heavy in-rush of current to the lamps through the flasher brushes is avoided.

Oiling — Use light engine oil for the motor bearings, putting in a few drops every thirty days. Cup grease is used for worm gear driven Flashers and light oil for the bearings.

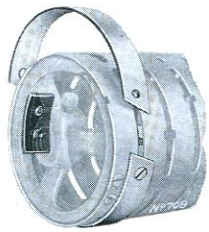
In cold temperatures (below 30°) **non-freezing** oils and greases should be used.



Convenience to the User and Making It Easier for the Maintenance Man was the Thought Back of These Improvements

Fastening Collector Rings

Splicer Plate which acts as a duplex nut, enables the repair man to renew the collector rings quickly and easily.



See How simple it is to reset brushes on a RECO Flasher. **Use your fingers;** anyone can do it.

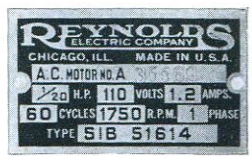
Thumb screws are interchangeable with the standard adjusting screws.

Keep Drums Tight on Shaft

If you have trouble in this direction and no tools, order one of these **socket wrenches.**

Method of Identifying Flasher

Flasher Name Plate



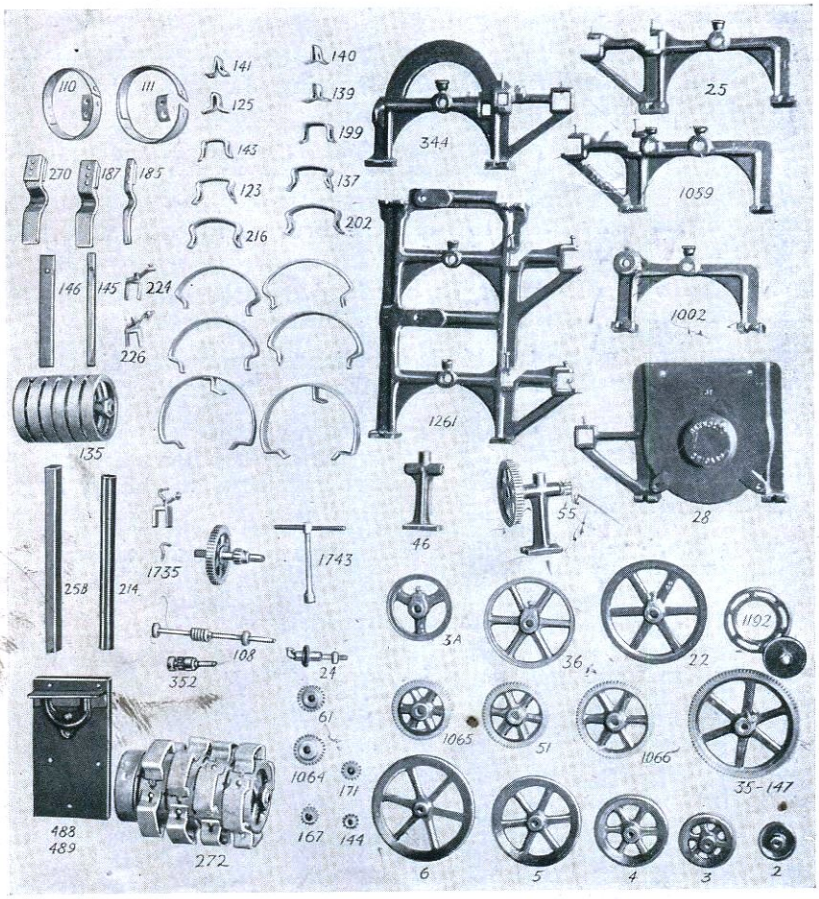
Motor Name Plate

Each Flasher is identified by a serial number (top line) on the name plate fastened to the angle iron base of machine. (See Cut No. 122 on page 3.) Same serial number together with motor specifications are shown on the motor name plate. See cuts above.

Sign Manufacturers who are prepared to render service have a big advantage over those who don't.

It pays to "keep up" signs. A small sign properly maintained is more effective than a large sign neglected.

Reco Flasher Parts



Part No.	Description	Price
2	2 in. Grooved Pulley	$0.60
3	3 in. " "	.60
3A	Drum Wheel, 4 in. Diameter	.80
4	4 in. Grooved Pulley	.80
5	5 in. " "	.80
6	6 in. " "	1.25
22	Drum Wheel, 6 in. Diameter	1.00
24	Idler Stud Assembly	2.00
25	Drum Frame	1.50
25B	Slate, ¾ x ¾ in., per inch	.10
28	Drum Housing	2.90
31	" " Cover	.95
35	98-T Gear Wheel (Worm)	1.80
36	Drum Wheel, 5½ in. Diameter	1.00
46	Idler Stand	1.00
51	60-T Gear Wheel	1.10
55	Idler, complete, obsolete. In place of No. 55 use 2 No. 1059 Stands, 1 No. 1079 Comb. Idler and 1 each No. 1064-1066.	
61	24-T Idler Gear with bushing	2.00
108	Worm Shaft, complete	2.75
110	5A Collector Ring, ¾ in. wide, including Splicer, per set	.60
111	15A Collector Ring, 1¼ in. wide, including Splicer, per set	.80
135	5 Slot Drum, complete. (Add 25c for each additional slot)	2.50
144	12-T Pinion, 5/16 in. bore	.50
145	5A Collector Brush, 7/16 in. wide	.40
146	15A " 1 in. wide	.55
147	98-T Gear Wheel (Spur)	1.80
167	14-T "	.50
171	16-T "	.50
185	5A Brush, 7/16 in. wide	.40
187	15A " 1 in. wide	.55
214	Bumper Bar, per inch	.10
224	5A Brush Holder	.40
226	15A " "	.50
270	Collector Control Brush	.65
272	4-8 Speed Drum, complete	12.00
344	Speed Frame	3.00
352	" Shaft, complete	2.25
488	" Base Assembly	.50
489	Speller Base Assembly	.50
1002	Bearing Stand	2.50
1059	Combination Stand	2.00
1064	28-T Gear	1.10
1065	56-T "	1.10
1066	70-T "	1.10
1079	Combination Idler Assembly	2.50
1192	Belt Tightener Assembly	3.00
1261	Double Deck Gear Stand	4.50
1735	Brush Holder Thumb Screw	.02
1749	Socket Wrench	.80
	¼ in. Standard Flasher Belting, per ft.	.20
	5/16 in. Heavy Duty Flasher Belting, per ft.	.25

CONTACTS

141	5A Contact, ¾ in. wide, ⅛ in. long	.16
125	5A " ¾ in. " ¼ in. "	.20
143	5A " ¾ in. " 1½ in. "	.20
123	5A " ¾ in. " 2½ in. "	.25
216	5A " ¾ in. " 4 in. "	.25
140	15A " 1⅛ in. " ⅛ in. "	.20
139	15A " 1⅛ in. " ½ in. "	.25
199	15A " 1⅛ in. " 1½ in. "	.30
137	15A " 1⅛ in. " 2½ in. "	.35
202	15A " 1⅛ in. " 4 in. "	.35
	5A Contacts, longer than 4½ in. add 2c for each ½ in.	
	15A " longer than 4½ in. add 3c for each ½ in.	

HEAVY DUTY SPEED CONTACTS

1765	15A Contact, 1⅛ in. wide, 2½ in. long	$1.00

Flasher Motors

(Reliable REYNOLDS ELECTRIC COMPANY make)

Successful for years, built for severe service. Price **$16.00.**

Specify kind of current, voltage, cycles, and size of Flasher.

Contacts are measured by laying a flexible rule over the curved surface, and made in lengths up to 10 inches in ½-inch steps, and up to 15 inches in 1-inch steps.

Brushes are made in two sizes, 7/16 inch and 1 inch wide.

Standard Drums have 3, 5, 7 or 9 slots.

Pulleys are made in 9 sizes, 2 inches to 6 inches in diameter, in ½-inch steps.

Pinions or gears are described by the number of teeth and size of bore.

In ordering parts, give serial number shown on name plate fastened to angle iron of machine, illustrated on page 13, complete description and dimensions of parts, or send samples.

If you have no account with us, send remittance with order.

Be a RECO Service Station! **A few Motors, Flasher Parts and Color Hoods carried on hand enable you to render SERVICE and establish a maintenance department—a paying proposition in itself and an entering wedge for new sign business.**

Keep signs clean—wash color hoods occasionally—renew lamps as they grow dim—oil, clean and adjust flasher at regular periods and enjoy 100% advertising efficiency from your electrical displays.

Reco Color Hoods

Full Hood

Full and Half types, Six Colors: Ruby, Green, Canary, Amber, Blue and Opal. Four Sizes. (Fully described in Bulletin No. 76.)

For color effects in Electric Signs, Marquees, Canopy lights, House or Stage Lighting, Exit Lights, Elevator signals, Danger Lights, Show Windows or wherever colored lamps are required.

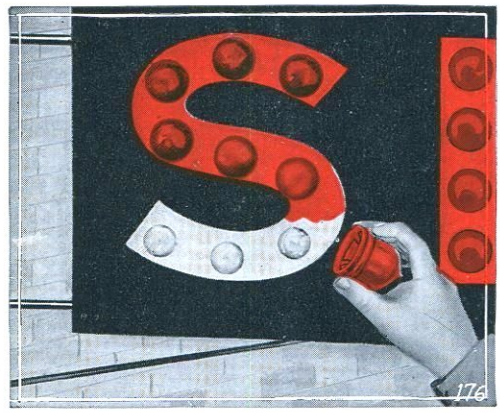
Signs using dipped or coated lamps are dull and lifeless. Those using RECO have brighter, more attractive and permanent colors.

Full Hoods are used when a complete color effect is desired.

SF-14—Fits bulb S-14 (10w).....**25c**

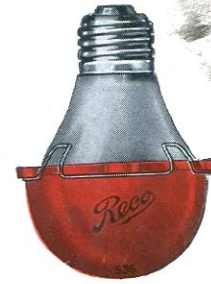
AF-19—Fits bulb A-19 or P-19 (25w).....**40c**

AF-21—Fits bulb A-21 (40-50-60w).....**50c**



Half Hoods reflect light to background. Used in channel letters, etc.

SH-14—Fits bulb S-14 (10w).....**20c**
AH-17—Fits bulb A-17 (15w).....**25c**
AH-19—Fits bulb A-19 (25w).....**35c**
AH-21—Fits bulb A-21 (40-50w)..**45c**



Half Hood

Makes Ordinary White Lamps Colored

Just a second to snap the hood over the bulb, and bright color replaces the ordinary white light.

Reco Hood Holders

Hoods when used with holders are ideally suited for Theatre Canopies, Marquees, Back Stage Lighting, Attraction Boards, Signs, Decorative Lighting for both exteriors and interior, signal work, etc. Made of non-corrosive metal—provide a weather-proof and dust tight fitting.

Deep Type

For Screw Receptacles (Protruding type)

Ring clamps Holder in place

Advantages

Protects lamp.

Easy to keep clean.

Saving in maintenance alone will pay cost of holder over a short period.

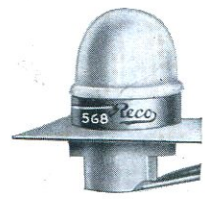
Keeps white light from escaping.

Prices

SF-14—Holder (Specify deep or shallow).....**$0.15**
AF-19—Holder (Specify deep or shallow)..... **.20**
AF-21—Holder (Specify deep or shallow)..... **.30**

Shallow Type

For Flush Type of Receptacle



Bayonet holes for socket screws

Laco Color Hoods

Laco Color Hoods are used for lamps of from 75 to 500 watts in size. Furnished in ruby, green, amber and blue.

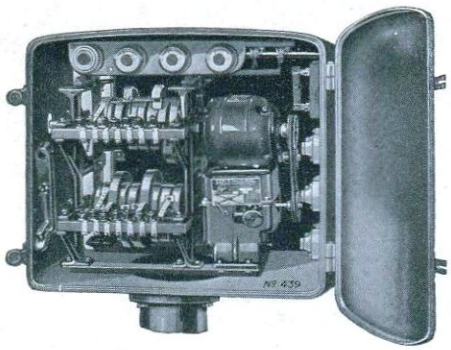
Prices

No. 1 for lamps 75 to 150w..**$2.20**
No. 2 for lamps 200 to 300w.. **2.40**
No. 3 for lamps 300 to 500w.. **4.00**

"It appears to be an absolutely new sign," writes a Utah bank president. "I must say that Reco Color Hoods improve the appearance of the sign wonderfully."

We also make a complete line of Color Equipment for Standard Flood Lights, Show Window Reflectors, Street Lamps, etc. Write for particulars.

Reco Products



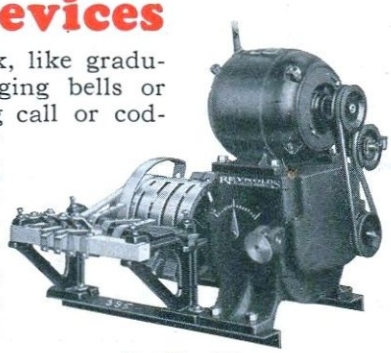
Cut No. 439

Our latest combination hand and motor control, mounted in cast iron cabinet. Furnished complete with switches for night lights, main line and throw over circuits; fuse blocks.

Traffic Controls for Stop and Go Signals, Street Traffic Regulation Lights, Through Street Stop Signs, Railroad Crossings, dangerous points in highways, etc.

Special Control Devices

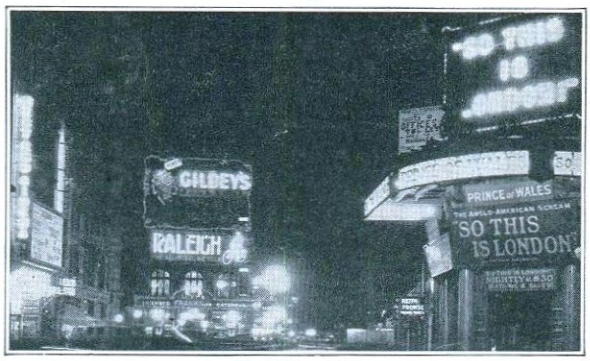
For a large variety of contacting work, like graduating tones of fire alarm sirens, ringing bells or gongs, flashing signal lights, operating call or coding systems (lights or horns), elevator signals, reversing motors operating laundry tubs, show window lights, exhibits, maps, electric fountains, flashing bulletin or poster boards, color changing exteriors of buildings, stage lighting effects, or wherever it is expedient to open or close electrical circuits by automatic means.



Cut No. 419

If you have any timing or contacting problem send us complete details and our engineering department will make suitable recommendations for your individual requirements.

A Night Scene in London



Cut No. 622

RECO Equipment is used all over the world.

REYNOLDS ELECTRIC COMPANY equipment is standard among central Stations, Engineers, Contractors, Sign Builders, Traffic Signal Manufacturers, Municipalities, U. S. Lighthouse Service, Railroads, and others.

Reco Reflectors

For Painted Signs, Walls, Bulletin and Poster Boards

RECO Reflectors are decagon (10 sided) in shape and prismatically compound the light rays so that a perfectly even distribution of light results.

For 100 W. or 150 W. Lamp

Three Colors—Blue, Green and White

REYNOLDS ELECTRIC COMPANY Flasher Motors

For the past fifteen years we have built our own motors, with the result that we have had little or no motor trouble, notwithstanding the fact that flasher work is about the hardest duty which can be imposed upon a motor.

A flasher motor is required to operate under various climatic conditions, on the roof, in a damp basement, or other unfavorable locations, from eight to eighteen hours per day and must be reliable.

LARGE DRUM FLASHERS

In addition to the regular line of Flashers, Controls, etc., listed in this catalogue, we also make apparatus for contacting or flashing work for special purposes and can furnish flashers with drum diameters of eight, also ten inches. If you have any special problems, write us—our Engineering Department will gladly assist you in working out details and make suitable recommendations.

Where *Reco* Products Are Manufactured

Over quarter century—satisfactory service

REYNOLDS ELECTRIC COMPANY

2550 W. CONGRESS ST., CHICAGO, ILL.

PRINTED IN U. S. A.
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